



(1) Publication number: 0 467 871 A3

12

## **EUROPEAN PATENT APPLICATION**

(21) Application number: 91850175.0

(22) Date of filing: 24.06.91

(51) Int. CI.5: **E21B 10/22**, F16J 15/32,

C08L 9/02, C08L 15/00

(30) Priority: 11.07.90 US 550965

(43) Date of publication of application : 22.01.92 Bulletin 92/04

(84) Designated Contracting States : AT DE FR GB IT SE

Bate of deferred publication of search report: 14.04.93 Bulletin 93/15

(1) Applicant: SMITH INTERNATIONAL, INC. 16740 Hardy Street Houston, Texas 75032 (US) (2) Inventor: Denton, Robert (NMI)
209 Chelsea
Friendswood, Texas 77546 (US)
Inventor: Sinclair, James J.
21135 Sailors Bay Lane
Huntington Beach, California 92646 (US)

(74) Representative: Henningsson, Gunnar et al Awapatent AB Box 45086 S-104 30 Stockholm (SE)

- (54) O-ring seal for rock bit bearings.
- (57) An O-ring seal composition for retaining the lubrication around a rock bit bearing for drilling subterranean formations comprises 100 parts by weight highly-saturated nitrile elastomer, furnace black in the range of from 40 to 70 parts by weight, peroxide curing agent in the range of from 7 to 10 parts by weight, zinc oxide or magnesium oxide in the range of from 4 to 7 parts by weight, stearic acid in the range of from 0.5 to 2 parts by weight, tetrafluoroethylene particles in the range of from 0 to 15 parts by weight, and a fatty acid amide selected from the group containing saturated or unsaturated fatty acid amides 15 to 25 carbon atoms in length in the range of from 0 to 8 parts by weight.



## **EUROPEAN SEARCH REPORT**

Application Number

EP 91 85 0175

ategory	Citation of document with in of relevant par	dication, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
(	DE-C-3 226 081 (BAY * column 1, line 15		1-3	E21B10/22 F16J15/32 C08L9/02 C08L15/00
•	US-A-4 851 068 (UYE * abstract * * column 5, line 55	·		
	EP-A-0 163 971 (NIP * abstract * * example 3; table	·		
				TECHNICAL FIELDS
				SEARCHED (Int. Cl.5)
				CO8L
	The present search report has i	een drawn up for all claims	-	
Place of search THE HAGUE		Date of completion of the search 19 FEBRUARY 1993		METTLER R.M.
CATEGORY OF CITED DOCUMENTS  T: theory or princ E: surfice patent of xt: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background		locument, but pu date i in the application	blished on, or on	